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THE EFFECTS OF FISCAL INSTITUTIONS ON PUBLIC FINANCE: A SURVEY OF THE EMPIRICAL EVIDENCE*

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Abstract

This paper surveys the empirical research on fiscal institutions of the last three decades. The main results are: (i) Constitutional or statutory fiscal limitations have in most cases proved to be effective in cutting down public expenditure, revenue, and debt. (ii) Budgetary procedures matter as well. They might be less effective than constitutional or statutory rules, but in a situation where it is impossible to introduce such rules they might present a feasible second-best way to reach fiscal sustainability. (iii) Citizens demand fewer public services and a sounder fiscal policy in systems with direct legislation than in purely parliamentary systems. (iv) There is some evidence that fiscal federalism leads – ceteris paribus – to a smaller size of the government. There are also political institutions which have an impact on the public budgets, and there are some interactions between the different institutions.

JEL Classification: H61, H71.

Keywords: balanced budget, budgetary procedures, fiscal federalism, direct democracy, public expenditure, public debt.

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1 Introduction

Public Choice and especially the Economic Theory of Politics was one of the starting points of the 'New Institutional Economics'. In the beginning, there were two almost contradictory results: In 1948, DUNCAN BLACK showed in his paper "On the Rationale of Group Decision Making" that with single peaked preferences the political outcome corresponds to the median voter's preferences, while three years later KENNETH ARROW (1951) proved in his "*Social Choice and Individual Values*" that there is no political decision mechanism which is based on ordinal comparisons of the citizens and in addition generally allows to aggregate the individual preferences in a way that the social welfare function satisfies some very simple and plausible democratic and rationality conditions. About ten years later, JAMES M. BUCHANAN and GORDON TULLOCK (1962) started with their "*Calculus of Consent*" what later has been called 'Constitutional Economics', an economic theory of the perhaps most important formal institutions.

Though it was clear from the beginning that institutions matter, it took quite some time before empirical research was launched that investigated how much they matter. In general, despite the fact that A. DOWNS (1957) developed testable hypotheses in his "*Economic Theory of Democracy*", during the first two decades of the development of Public Choice, theoretical work was strongly emphasised, and even today the theoretical work still dominates. Even worse, Public Choice theorists have been accused by (more traditional) political scientists that they ignore the empirical evidence which is available from other parts of the social sciences and contradicts the theoretical insights of Public Choice.[1)]

The empirical work which is relevant for public finance started from two quite different points. One line of research, starting with T. BORCHERDING and R. DEACON (1972) as well as T.C. BERGSTROM and R.P. GOODMAN (1973), has taken the median voter model as a new basis for explaining the size and development of public expenditure.[2)] This has, however, mainly been done in the context of representative democracies. It has been questioned whether this model is really applicable to such systems because it presupposes a direct democracy,[3)] and already W.W. POMMEREHNE (1978) showed in a comparison of Swiss local communities that it

1. See, e.g., D.P. GREEN and I. SHAPIRO (1994).
2. Another line of empirical research of Public Choice, the development of 'politico-economic models' or models of the 'political business cycle', respectively, started also at the beginning of the seventies with the papers of C.A.E. GOODHART and R.J. BHANSALI (1970), G. KRAMER (1971) and W.D. NORDHAUS (1975). It consists of an economic theory of voting behaviour which links the decision of voters to the economic development and a theory of government behaviour which assumes vote maximising behaviour of the government. (An alternative is ideologically oriented behaviour as assumed in the partisan model of D.A. HIBBS (1977).) Especially the B.S. FREY and F. SCHNEIDER (1978, 1978a, 1979) models used this approach to explain government expenditure and revenue. Models of the political business cycle are still being further developed. The main difference between the earlier and the more recent papers on this topic is that the more recent ones assume rational expectations of the electorate while the earlier ones mostly used adaptive expectations. (See, e.g., S. LOHMANN (1998) or G. SIEG (2001) for two recent papers.) However, the only institutional factor in these models is the election or, to state it more precisely, the impact of the coming election on public expenditure. Moreover, there are many surveys of these models available. (See, e.g., M. PALDAM (1997) or M. GÄRTNER (2000).) Thus, we do not discuss them further in this paper.
3. See, e.g., T. ROMER and H. ROSENTHAL (1979) or CH. ROWLEY (1984).

is better suited to explain the development of public expenditure in direct compared to (purely) representative democracies.[4)] This, however, did not impede its popularity in empirical (and theoretical) research, a development which might be justified in situations of 'divided government', i.e. where voters have two independent decisions which have an impact on the political outcome like, e.g., in the United States the elections for the president and the congress or, in Germany, the decisions about the two different chambers of the national parliament. In such situations voters can – and often do – split their vote and – in this way – force the government (parliament) to correct policy outcomes towards the median voter's position.[5)]

As long as the median voter model was just employed as a theoretical basis to model fiscal behaviour, institutional factors played at best a secondary role. This changed in the last decade in which a literature evolved which did not only ask whether this model can also be applied to a representative democracy but which explicitly searched for the differences between purely representative democratic systems and democratic systems which have – besides the institutions of the representative democracy – direct political rights of the citizens. Such investigations have been undertaken for the U.S. and Switzerland.[6)] But direct popular rights are not the only characteristic of the political system which shape the institutions of budgetary processes. Another very important one is whether the fiscal system of a country has a federal structure or not.

The second line, particularly following the attack of J.M. BUCHANAN on Keynesian deficit spending policy[7)] has been investigating whether (constitutional) balanced budget rules really have an effect on the size of the government and/or the public deficit and debt. The fact that the public deficit and the (rising) public debt was one of the major concerns of this literature can on the one hand be explained with the rising public debt following the acceptance of Keynesian policy prescriptions in the fifties and sixties. On the other hand there was (and still is) a strong political belief that a large deficit indicates a mis-functioning of the political system. The share of the government may be high, but as long as the citizens are willing to pay the corresponding taxes there is no reason to be concerned about this.[8)] If, however, government spending exceeds tax revenue in the long-run, there might be some kind of tax illusion which can be exploited by a Leviathan government. In such a situation it would make sense to search for (constitutional) constraints to tame Leviathan.[9)]

However, as will be discussed below, constitutional constraints did not – at least at the beginning – seem to be particularly effective. This was the casual experience, e.g., of the GRAMM-

4. See also S.B. MEGDAL (1983), D.L. CHICOINE, N. WALZER and S.C. DELLER (1989) and R.E. SANTERRE (1989, 1993) who use a similar approach for the U.S.

5. See, e.g., A. ALESINA and H. ROSENTHAL (1995) or G. KIRCHGÄSSNER (1997).

6. For a review of the empirical evidence see, e.g., G. KIRCHGÄSSNER, L.P FELD and M.R. SAVIOZ (1999) and L.P. FELD and G. KIRCHGÄSSNER (2000).

7. See, J.M. BUCHANAN and R.E. WAGNER (1977, 1978) or J.M. BUCHANAN (1985).

8. A theoretical basis for this belief can be seen in the fiscal competition model of Ch.M. TIEBOUT (1956).

9. For J.M. BUCHANAN (1985) this has an important moral dimension: "Having lived through the destruction of fiscal morality by the Keynesian mind-set, we must make every effort to replace this morality with deliberately-chosen constraints which will produce substantially the pre-Keynesian patterns of results" (p. 5).

RUDMAN-HOLLINGS act in the United States, but it also showed up in analyses at the state level. Thus, people began looking for other institutions as well which could help to limit the public deficit and – in this way – in the long-run also public debt. Such institutions might be included into the budgetary process. It was especially J. V. HAGEN who took up this question and showed that budgetary procedures like, e.g., the position of the minister of finance or the transparency of the budget, can have a major impact on fiscal performance, too.[10)]

This paper is a survey about what we know today from empirical research about the effects of such fiscal institutions. Thus, we do not survey the theoretical approaches, and we also do not consider other institutions like electoral systems or the differences between presidential and parliamentary systems, even though these can also have (and at least in some cases actually have) effects on the public budget.[11)] We start with the discussion of (constitutional) rules to limit the budget deficit (*Section 2*). In *Section 3* budgetary procedures are considered. Then, we ask for the impact of direct popular rights on the budgetary process (*Section 4*) and for the effect a federal fiscal structure has on the size of the public sector (*Section 5*). We conclude with a summary and point to some of the interdependencies between the different fiscal institutions (*Section 6*).

2 Rules to Limit the Public Deficit

As the recent survey of J.M. POTERBA (1997) shows, there are not many empirical studies about the effects of constitutional and/or statutory rules which are intended to reduce expenditure and/or the deficit.[12)] With one exception of a study about Switzerland, all others are for the United States, some of them for the federal level and the others for the state or local levels.

At the federal level, there are countries which have constitutional restrictions, but with different strength and effects. In Germany, e.g., Artikel 115 (1) of the Grundgesetz requires that, except for major macroeconomic distortions, federal net lending must not be higher than investment expenditure on the federal level. This has, however, neither prevented the federal deficit nor the federal debt from rising sharply since the mid-seventies.[13)] In the United States, the GRAMM-RUDMAN-HOLLINGS (GRH) act was enacted in 1985. Already in July 1986 this act was declared unconstitutional by the U.S. Supreme Court. Few years later, the Budget Enforcement Act (BEA) passed in 1990. The impact of these institutions is not clear. In Swit-

10. See, e.g., J. VON HAGEN (1992a) or J. VON HAGEN and I.J. HARDEN (1994, 1995). Empirical analyses of the budgetary process in the U.S. have already been performed at the beginning of the seventies. (See, e.g., O.A. DAVIS, M.A.H. DEMPSTER and A. WILDAVSKY (1971).) However, these analyses did not have the aim of identifying institutional aspects which are important for reducing public deficits and debt. Thus, they are not relevant for our discussion.

11. For a recent survey about the effects of these political institutions see T. PERSSON and G. TABELLINI (2000). The historical record of political institutions and fiscal policy in the U.S., e.g., is presented in R.P. INMAN and M.A. FITTS (1990).

12. See also the overview in H. BOHN and R.P. INMAN (1996, p. 17).

13. See for this, e.g., R.K. V. WEIZSÄCKER (1992).

zerland, a similar constitutional amendment, the 'Schuldenbremse' (debt brake), is discussed at the moment in the federal parliament.

There are some studies which analyse the U.S. situation at the federal level.[14)] According to E.M. GRAMLICH (1990), "the fact that GRH was instituted just as primary deficits were dropping seems largely incidental – defence spending had lost its political constituency anyway, non-defence spending was drifting down anyway, and taxes were going up anyway. Budget bargaining, or any changes in the process due to GRH, seemed to have little to do with the improvement" (p. 80). Though the results of S.D. HAHM et al. (1992) and R.D. REISCHAUER (1990) are somewhat different, the evidence does at least not speak strongly for the effectiveness of GRH. This is somewhat different with BEA, but, as J.M. POTERBA (1997, p. 71) correctly notes, there might be an endogeneity problem: "The passage of GRH and later BEA may signal shifting voter preferences, as reflected in the political process. ... If so, then the budget outcomes observed since the enactment of these reforms may not be due to these laws per se but may reflect changing fiscal tastes more generally". This case is – given the data which are available – observationally equivalent to a situation where these laws really had an effect. Thus, due to this simultaneity problem it is impossible to discriminate between these two hypotheses.

The natural consequence in such a situation is to look for samples with more variation, i.e. to shift attention from the national to the state and local levels. Some of the first studies which proceeded in this way did also find no significant impact,[15)] while the later studies mostly present positive evidence. One of the first studies which did find a significant impact is M.A. NELSON (1986). Using data for the states and the fiscal year 1976/77 he finds a significant effect of borrowing limitations on taxes per capita and (but only on the 10 percent level) on taxes as percent of personal income. He does, however, somewhat astonishingly, not find a significant impact of tax limitations in his data.

H.W. ELDER (1992) looks at the effects of state tax and expenditure limitation laws. He uses data from 17 states over a period from 1950 to 1985 which have imposed limitation laws between 1977 and 1982. He does not find a significant effect for the limitation itself which is measured by a dummy variable which is equal to one for the period during which the limitation law is in force, but he finds a negative significant effect for the interaction between the limitation variable and real income on state tax revenue, which implies "that the effective tax rate has fallen by approximately 16 percent compared to the pre-limitation period" (p. 57). On the other hand, while federal transfers had a negative impact on state tax revenue in the pre-limitation period, this effect vanishes in the post-limitation period. Splitting the dummy variable between expenditure and revenue limitations, H.W. ELDER (1992) finds that only expenditure limits have a significant impact. But according to him this does not necessarily mean

14. See the overview in J.M. POTERBA (1997, pp. 64ff.).

15. See, e.g., ADVISORY COMMISSION ON INTERGOVERNMENTAL RELATIONS (1987), J. VON HAGEN (1991) or J. ALT and R.C. LOWRY (1994). For a detailed critique of these studies see H. BOHN and R.P. INMAN (1996, p. 17).

that revenue limitations are ineffective; this result might be due to the fact that the four states in his sample which used such limitations did so in an inefficient way.

Using three different measures of fiscal restrictions, B. EICHENGREEN (1994) investigates in a panel of the U.S. states and the years 1985 to 1989 the effect of deficit restrictions on the size of deficits. He finds a significant negative impact on the deficit if a dummy variable is used as indicator for the fiscal restraint which is equal to 1.0 for states prohibited from carrying over a deficit into the next fiscal year or which is equal to 1.0 for states whose governors must sign a balanced budget by statutory or constitutional law (and zero otherwise). In reporting these results, B. EICHENGREEN and T. BAYOUMI (1994, p. 786) argue that "these results uniformly suggest that fiscal restraints affect the size of budget deficits."

J.M. POTERBA (1994) asks how states with and without balanced-budget rule react on adverse shocks. He shows that "states with relatively tight constitutional or statutory rules that make it more difficult to run deficits experience more rapid fiscal adjustments when revenues fall short of expectations or spending exceeds projections" (p. 818).

Using a panel over 49 U.S. states and annual data from 1961 to 1990, D.R. KIEWIET and K. SZAKALY (1996) test constitutional limitations on borrowing. They find that revenue based limitations have no effect at all, but states that prohibit guaranteed debt have less borrowing than if a supermajority of the legislature is required to issue new guaranteed debt. Moreover, the change from a prohibition to only demanding a supermajority to issue new guaranteed debt has a highly significant impact on it. On the other hand, despite the fact that it is not significant in the equation for non-guaranteed debt, it seems to have a positive impact on total state debt. Thus, the results reported by these two authors are not consistent.

The most comprehensive study has, up to now, been performed by H. BOHN and R.P. INMAN (1996). They use data from 50 states for the period from 1970 to 1991. Their analysis "leads to four main conclusions: First, balanced-budget constraints that apply to an audited, end-of-year fiscal balance are significantly more effective than constraints requiring only a beginning-of-the-year balance. Second, all state balanced-budget rules are ultimately enforced by a state's supreme court. Those states whose supreme courts are directly elected by citizens have 'stronger' constraints (which lead to larger average surpluses) compared to those states whose supreme court justices are political appointments of the governor or legislature. Third, there is tentative evidence than constraints grounded in the state's constitution are more effective than constraints based upon statutory provisions. Fourth, and finally, budget surpluses in strong balance-rule states are slightly less responsive to cyclical swings in income and unemployment than are surpluses in states with weak requirements" (p. 64).

The idea of J.M. POTERBA (1994, 1995) that tax and expenditure limits are endogenous, i.e. that those states of local communities adopt it where voters have a preference for – compared to other states – lower public expenditure and revenue has been taken up by in R.J. SHADBEGIAN (1998). Using a panel of local expenditure and revenue data aggregated to the state level over the period from 1972 to 1992 he presents statistical evidence for the endogeneity assumption, and he shows that if this is taken into account one finds in most cases a significant effect of tax and expenditure limitations on the size as well as on the growth of local expenditure and revenue, and on property taxes. Using data for 2'955 counties in five-years' intervals from 1962 to 1987, in R.J. SHADBEGIAN (1999a) he shows that such limitations induce local governments to shift the revenue structure away from taxes towards other revenue sources. Distinguishing between local governments who face less and those who face more stringent limitation laws he shows that in the former group this shifting leads to an increase of the revenue from these sources, but only half of the loss of tax revenue is compensated for in this way. For the latter group no such compensation is observed.

The most recent study is by D. BAILS and M.A. TIESLAU (2000). They use data from 49 states observed at five-years' intervals from 1964 to 1994. In their model, expenditure limits, a balanced budget rule in combination with expenditure limits and a balanced budget rule together with a supermajority requirement for tax increases have a significant negative impact on public expenditure, while neither the balanced budget rule itself nor the supermajority requirement itself nor the line-item veto power have a significant impact.

Another aspect has been considered by J.M. POTERBA and K. RUEBEN (1999). Using a panel for 40 U.S. states over the period from 1973 to 1995 they investigate the effect of state fiscal institutions on state bond yields. According to their estimates, lax anti-deficit rules have a positive and limits on issuing debt a negative impact on state bond yields, but both effects are not significant. On the other hand, binding expenditure limits have a significant negative and binding revenue limits a significant positive impact on the bond yield.[16)]

The effectiveness of fiscal restraints can also be investigated in the Swiss case. While nearly all cantons have constitutional fiscal restraints that demand them to balance their budgets over time in one way or the other, only five cantons, Appenzell a. Rh., Fribourg, Graubünden, St. Gallen and Solothurn, have statutory fiscal requirements.[17)] They require the cantons to increase their tax rates if budget deficits increase above a deficit threshold. In Fribourg this requirement is specified such that local taxes are not covered by it, but a bail-out of the cantonal by the local level is highly improbable. In St. Gallen and Solothurn, there is an additional restriction on decreases of the tax rates in order to restrict deficit financing. The requirements are less restrictive in Appenzell a.Rh. and much less in Graubünden.

Using a panel over the 26 Swiss cantons and the years 1986 to 1997, L.P. FELD and G. KIRCHGÄSSNER (2001) show that these restraints have a positive effect on cantonal revenue and a negative one on public expenditure, but neither is statistically significant. On the other hand, the sum of both effects is significant: Cantons with such restrictions have significantly lower

16. Similar results have already been derived by T. BAYOUMI, M. GOLDSTEIN and G. WOGLOM (1993) and are reported in B. EICHENGREEN and T. BAYOUMI (1994). A more thorough analysis about the transmission which leads from balanced budget laws to effects on state government bond rates is given by R.C. LOWRY and J.E. ALT (2001).

17. For a detailed description of these restraints see Th.P. STAUFFER (2001, pp. 72).

debts and deficits. The deficit per capita, e.g. in Fribourg, which is the canton with the strongest requirements, is about 275 Sfr lower due to this effect. At the local level the negative and positive effects on expenditure and revenue are again statistically not significant, while the effect on the deficit is significant; it shows that in the case of the strongest restriction deficit per capita is about 245 Sfr lower.

If one accepts that in many cases balanced-budget rules have been effective, the next questions are what were the reactions of the political bodies and what were – besides lower taxes – the results for the citizens. These problems have been investigated in the U.S. particularly with respect to the consequences of ‘Proposition 13’ and the other taxpayer revolts. Especially at the local level, the first reaction on the introduction on constitutional constraints was an escape from the (official) budget and/or increased public debt.[18)] In a second step, some tasks have been shifted to the states. The states followed a similar strategy: In doing so, they had little success in shifting tasks to the federal level but more in shifting them to the local level. The local communities changed their revenue structure. They used more charges for specific services, which has regressive distributional consequences, or used more grants from the states.[19)] Finally, they found extra-budgetary possibilities to finance their services. One example is the ‘Mello-Roos-Financing’. If two thirds of the electorate in a referendum agree, the local communities have the possibility to erect ‘Community-Facilities-Districts’ which can collect own taxes and issue own debt to finance several local services. While in 1983 it were only 10 Million U.S.-Dollars which have been raised in this way, in 1990 it has already been 1 Billion U.S.-Dollars.[20)]

Taking all results together, fiscal restrictions have had a more restrictive impact at the local than at the state level. Moreover, they had more effect in the short- than in the long-run, because on the one hand it has been tried (with mixed success) to shift tasks to other governmental levels and on the other hand to find other revenue sources, especially fees and charges. It is open what the net effect of all this on the fiscal structure was. While J.G. MATSUSAKA (1995) and K.S. RUEBEN (1999) see a significant decentralisation, D.R. MULLINS and P.G. JOYCE (1996) find evidence for some centralisation.

The effect of these limitations on the quality of the services which are provided is also interesting. While the pressure exerted by the limitations might increase the efficiency of the public bureaucracy, the quality of the services might deteriorate. Thus, at least in the long-run, such limitations are not necessarily beneficial for the citizens.[21)] This can be especially relevant for educational expenditures, because on the one hand this is a large part of local expen-

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18. See for this, e.g., J.C. CLINGERMAYER and B.D. WOOD (1995) or T. KING-MEADOWS and D. LOWERY (1996).

19. See for this D. MATZ (1981), D.R. MULLINS and P.G. JOYCE (1996) as well as G.M. GALLES and R.L. SEXTON (1998).

20. See for this A. O’SULLIVAN, T.A. SEXTON and ST.M. SHEFFRIN (1994, pp. 105ff.).

21. See for this, e.g., D.M. CUTLER, D.W. ELMENDORF and R. ZECKHAUSER (1999) who present evidence that in Massachusetts voters in communities with larger initial tax cuts by proposition $2^{1/2}$ (which passed in 1980) supported in the 1990s significantly more overrides.

diture and on the other hand there have – at least in the short-run – been severe expenditure cuts in this area. Moreover, this is an area where the quality can be measured quite easily, by comparing the results in exams.

The empirical results are again mixed, but point definitely more in the direction of a deterioration of the quality. In a first paper, TH.A. DOWNES (1992) concludes that the performance of Californian students has even improved between 1976 and 1985, i.e. comparing the situations before and after Proposition 13 has passed. Because the test to measure this performance has been changed, however, during this period, this result is rather doubtful. In a second study for about 1500 students in Illinois, TH.A. DOWNES, R.F. DYE and TH.J. MCGUIRE (1998) also find no significant reduction in the performance of the students, except in mathematics. However, despite its statistical significance the authors evaluate this deterioration as quantitatively unimportant.

This is contrary to the result of D.N. FIGLIO (1997) in a study of 5'600 students from 49 states for the periods 1987/88 and 1990/91. He comes to the result that students in states with tax- or expenditure limitations had – ceteris paribus – a worse performance in several areas, among others in core subjects like the sciences and (somewhat less significantly) mathematics. These results have been corroborated by TH.A. DOWNES and D.N. FIGLIO (1997, 1999). Comparing the performance of students from the years 1972 (8'672 observations) and 1992 (6'054 observations) it is shown that students in states with tax- or expenditure-limitations had significantly worse results in mathematics, but not in English. The reason for this deterioration might be, as D.N. FIGLIO (1998) shows in a study for 305 schooling districts in Oregon and 296 schooling districts in Washington, that the relation between teachers and students decreased after the introduction of the limitations and that the starting salaries of teachers have been reduced what – according to D.N. FIGLIO and K.S. RUEBEN (2001) – had the consequence that highly qualified teachers did not want to teach in districts with fiscal limitations.

It is, moreover, highly questionable whether the production efficiency of the publicly provided services really increased. D.N. FIGLIO and A. O'SULLIVAN (1997) show for 5'150 U.S. local communities and the period from 1975 to 1986 that the expenditure for public security, i.e. for police and fire-brigades, decreased compared to expenditure for general administration. Similar evidence exists for the relation between teachers and administrative staff in schooling districts.

The distributional consequences were more strongly in favour of the lower income groups. Using five income groups D. DE TRAY and J. FERNANDEZ (1986) show in a study for four cities each of California and New Jersey that while the average tax burden has been reduced, the lower income groups benefited more than the average while the top income group even had to accept an increase of the tax burden. H. CHERNICK and A RESCHOVSKY (1982) derive a similar result with respect to the decreased tax burden of the lower income groups in a simulation model for California. A. O'SULLIVAN, T.A. SEXTON and ST.M. SHEFFRIN (1994, 1995, 1999) conclude that the results of Proposition 13 favoured especially immobile households. Because households with low income and/or old people are particularly immobile, they benefited most from the tax limitations. This also explains why these initiatives had a relatively high acceptance from lower income groups and old citizens.

Taking all results together, one can conclude that while not all investigated limitations have been effective, at least at the state and local levels most of them have helped to reduce public expenditure and revenue and the budget deficit. Second, there was a partial shift from taxes to user charges. Third, the quality of the public schools has deteriorated as a consequence of the limitations. Fourth, it is open whether the efficiency of the public administration really increased. Finally, the tax reductions favoured especially old citizens and lower income groups. How far the lower income groups have really benefited from the whole process has to remain open, however, because they mostly depend on the public schooling system and they, therefore, suffer mostly from the deterioration of the quality of the public schooling system.

3 The Fiscal Effect of Budgetary Procedures

In contrast to the conclusions drawn above, J. VON HAGEN (1991, 1992) concludes that "experience with budget norms in the U.S. suggests that governments find ways to circumvent fiscal restraints in practice, with the result that they are largely ineffective".[22)] Therefore, he looks at the problem of limiting public deficits from quite another perspective. He considers the budgetary procedures themselves and analyses whether they have an impact on the level of government expenditure and budget deficits.[23)] In doing so, he distinguishes five dimensions: (i) The structure of negotiations within the government, where the focus is on the position of the Minister of Finance in the cabinet, (ii) the structure of the parliamentary process, (iii) the informativeness of the budget draft, (iv) the flexibility of budget execution, and (v) finally a long-term planning constraint. In these dimensions he constructs indicators for several subdimensions, and then aggregates them to three different versions of a structural index and an index of long-term planning constraint.

He used these indices to explain public deficits and debts in the European Union, using a panel with annual data from 1981 to 1990 for the 12 member countries. In J. VON HAGEN (1992) he showed that there is a strong and significant relationship between the budget deficit and public debt on the one hand and his (first) structural index on the other. "Specifically, our results suggest that a budgeting process that gives the prime or finance (or treasury) minister a position of strategic dominance over the spending ministers, that limits the amendment power of parliament, and that leaves little room for changes in the budget during the execution process is strongly conducive to fiscal discipline, i.e., relatively small deficits and public debt" (p. 53f.).[24)] The index of long-term planning constraint, however, did not prove to be statistically significant. Nevertheless, the results indicate that a hierarchical or top down budgetary procedure may have advantages over a bottom up procedure.[25)]

22. J. VON HAGEN (1992a, p. 1). For a critique of these results see H. BOHN and R.P. INMAN (1996, p. 17). Today, the position of J. VON HAGEN is somewhat different. See, e.g., R.R. STRAUCH and J. VON HAGEN (2001).

23. For a description of these institutions see J. VON HAGEN (1998).

24. See also J. VON HAGEN and I.J. HARDEN (1994, 1995).

25. There is, however, some recent experimental evidence which shows that bottom up procedures might not be inferior to top down procedures. See K.-M. EHRHART, R. GARDNER, J. VON HAGEN and C. KESER (2000).

Similar studies have been performed by J. DE HAAN and J.E. STURM (1994) as well as by J. DE HAAN, W. MOESEN and B. VOLKERINK (1999). They get a negative coefficient for this index which is, however, significant only at the 10 percent level in their equation explaining the public-debt-to-GDP-ratio. Thus, they conclude "that budget institutions affect fiscal policy outcomes, but the effect is quite small" (1999, p. 284).

Using a cross-section for 1990, L.P. FELD and G. KIRCHGÄSSNER (2001a) test the hypothesis that these institutional aspects of the budgetary process have an impact on public debt for the largest 134 Swiss local communities. However, due to data limitations only three of the five proposed items are available for Swiss municipalities: (i) The structure of negotiations within the government, (ii) the informativeness of the budget draft, and (iii) the long-term planning constraint. On the other hand, due to the large number of observations, it was not necessary to further aggregate the different indices to save degrees of freedom, as J. VON HAGEN (1992) had to do. Thus, these items are introduced separately. The estimated coefficients of all three indices have the expected negative sign, but only the coefficient of the index of negotiations within the government is statistically significant, and only at the 10 percent level. Further disaggregation into the different sub-dimensions indicated that the only statistically significant impact is due to the agenda setting power of the mayor or the head of the finance department. If – besides the other economic and political variables – this index is the only one which is included into the equation, then its coefficient is significantly different from zero on the conventional 5 percent level.[26)]

Latin America was another field of application of this approach. A. ALESINA et al. (1999) who use a sample of almost all Latin American countries show that more hierarchical and/or transparent procedures lead to lower primary deficits. The same has been found by E. STEIN, E. TALVI and A. GRISANTI (1999) who use a cross section with up to 26 Latin American countries.

Instead of linearly aggregating the different indicators, F. LAGONA and F. PADOVANO (2000) perform a non-linear principal component analysis to aggregate them and use the first two components which account for about 60 percent of the overall variance in regressions to explain public deficit, debt, and expenditure. As dependent variables they use the 10 years' averages of the eighties and nineties of the 12 EU members countries, i.e. they have 24 observations.[27)] They consider six groups of indicators, (i) about the internal organisation of government, (ii) the formulation of the budget proposal within the government, (iii) the discussion and approbation of the budget law in the parliament, (iv) the informativeness of the budget law, (v) the flexibility in the implementation of the budget law, and (vi) the stringency of long-term budget documents.

The first principal component captures the groups of procedures of the structure of negotiations within the government, the structure of the parliamentary process, the informativeness of

26. Using a slightly different specification for the same data, in L.P. FELD and G. KIRCHGÄSSNER (2001) this coefficient did, however, not prove to be significant. This indicates that the results are not robust against the in- or exclusion of additional variables.

27. They exclude Austria, Finland, and Luxembourg.

the budget draft and most of the internal organisation of the general government. They interpret it “as a measure of rigidity of the rules for elaborating and approving the budget document, from its birth within the cabinet to its legification in the various government levels” (p. 16). The second principal component explains most of the flexibility in the budget execution, it “characterises the implementation of the budget law by the bureaucracy” (ibid). The first component has a significant negative impact on public debt and deficits, but a significant positive one on public expenditure. The second principal component also has a significant positive impact on public expenditure, but no significant impact at all in the other equations. Thus, stricter budgetary rules seem to go along with smaller public debt and deficits, but with higher public expenditure.

In a second ‘dynamic’ model with only 10 or 11 observations they explain the change of the dependent variables between the eighties and the nineties by the distance between the positions of the different countries in the eighties and nineties in the two dimensional space which is spanned by the two principal components.[28)] This measure of change has no significant impact on public debt, but a significant negative impact on deficits and – contrary to the results of the ‘static’ model also on expenditure. Thus, according to this estimate an increase in the strictness of the budgetary procedures between the eighties and the nineties reduced the real growth of government expenditure. However, due to the small number of observations even highly significant t-statistics are to be interpreted very cautiously.

M. HALLERBERG and J. VON HAGEN (1999) go one step further.[29)] Taking up the ‘stylised fact’ that electoral systems of proportional representation are more prone to high levels of public debt than majoritarian systems[30)] they distinguish ‘delegation states’ like Austria, France, Germany or the United Kingdom, where the finance minister has a strong position in the budgetary process and ‘commitment states’ like Belgium, Ireland or the Netherlands, where clear budget plans are written into the coalition contract and show that there is some kind of a natural connection between the electoral systems and these types of budgetary procedures: “Commitment is appropriate for countries with a proportionality rule, which tends to produce coalition governments. Delegation is the choice for countries with plurality rule or other systems that produce single party governments (or its functional equivalent – governments where the same parties run together election after election, as in France and Germany).”[31)] (In between these two types are ‘hybrid states’ like Denmark or Sweden.) Both strategies can be effective in reducing the deficit, but countries which want to reduce their deficit should – according to these results – choose the appropriate budgetary rules in accordance with their electoral system. Or to state it the other way round: In order to reduce the public deficit it is not necessary to change from a system of proportional representation to a majoritarian system, if the appropriate budgetary rules are implemented. This is contrary to the results by E. STEIN, E. TALVI and A. GRISANTI (1999) who in their paper about the situation in Latin America “do

28. Additionally, they exclude Sweden as an outlier from all equations and Italy as an outlier from the deficit equations.

29. See also M. HALLERBERG, R. STRAUCH and J. VON HAGEN (2001).

30. See for this, e.g., T. PERSSON and G. TABELLINI (2000).

31. M. HALLERBERG, R. STRAUCH and J. VON HAGEN (2001, p. 5).

not find evidence that strong budgetary institutions can neutralise the potentially adverse fiscal consequences of proportional representation on fiscal deficits and debt” (p. 105).

Taking all these results together (and accepting them despite the very small number of observations on which some of them are based), it is shown in this literature that budgetary procedures matter, and that the interaction between budgetary procedures and the electoral system matters: Not all budgetary procedures have the same effect in all electoral systems. It is, however, not clear, that they are more effective than constitutional or statutory balanced-budget or tax and expenditure limitation rules. In a situation where it is impossible to introduce such rules they might, however, show a feasible second-best way to reach fiscal sustainability.

4 The Fiscal Impact of Direct Democracy

Instead of searching for second-best solutions, one might consider a first best solution. Such a solution could be to give the citizens direct political rights in the budgetary process, by allowing for initiatives and referenda. While referenda can be used to prevent tax increases or to cut down large expenditure programs, initiatives can not only be used to cut down (or initiate) public projects but also, as has been shown by Proposition 13, to change the budgetary process. According to L.P. FELD and G. KIRCHGÄSSNER (2000), in more direct democracies, politicians and well-informed specialists in the legislature have less flexibility to pursue their personal interests, and by being able to decide themselves, citizens might feel more responsible for their community and be more prepared to accept decisions that lead to income or wealth losses for themselves. Both mechanisms are expected to lead to differences in economic policy decisions, especially with respect to the public budget.

To the extent one follows S. PELTZMAN (1992) and L. MOAK (1982) in their assessment that voters are fiscally conservative and prefer lower public deficits than representatives, one would expect that public deficits are lower in jurisdictions with deficit referenda than in those without referenda. To the extent one follows J.M. BUCHANAN (1958, 1987) in his assessment of a bias of voters for borrowing, one may expect public deficits to be higher in jurisdictions with deficit referenda than in those without referenda. However, the impact of referenda on budget deficits and public debt does not necessarily have to rely on fiscal conservatism of voters and thus their preferences. In a federal state, the tax base can be seen as a common property resource on which the agents of the different governmental levels, governments and/or parliaments, have access. As A. VELASCO (1999) has formally shown, in such a situation a dynamic problem may arise in analogy to the ‘tragedy of the commons’ as described by G. HARDIN (1968) which results in overspending and – possibly – also in a too large public debt.[32)] However, elements of direct democracy would reduce the danger of different agents overusing the fiscal commons, because the same citizens decide at all three federal levels and not different governments and/or parliaments.

32. See also M. WREDE (1999, 2000) as well as J.M. BUCHANAN and Y.J. YOON (2000) about fiscal commons.

Systematic analyses of the impact of referenda and initiatives on economic policy are available for Switzerland and for the U.S. states.[33)] In the first of these papers, using aggregate data on Swiss cities in 1970, W.W. POMMEREHNE (1978) shows that the median voter model performs better in jurisdictions in which political decisions are taken by voters directly in referenda and initiatives.[34)] Using data for the year 1990, G. KIRCHGÄSSNER, L.P. FELD and M.R. SAVIOZ (1999, p. 84f.) show with a simulation that in those cities without budgetary referenda government expenditure had been about 20 percent less if these cities had had this instrument. F. SCHNEIDER and W.W. POMMEREHNE (1983) show for 110 Swiss cities that expenditure growth in cities with direct democracy was – ceteris paribus – almost three percentage points lower than in representative democracies between 1965 and 1975. While expenditure growth was 9.6 percent on average in representative democratic cities, (according to simulation results) it would have been 6.8 percent if these cities had been direct democracies. In these analyses, cities are considered as direct democratic if their constitutions contain an obligatory or optional referendum or a local assembly to pass fiscal legislation in form of changes in tax rates, the budget draft, or budget deficits.

The results of L.P. FELD and J.S. MATSUSAKA (2000) for the 26 Swiss cantons during the period 1986 to 1997 point into the same direction. On average, spending in states with a fiscal referendum is 390 SFr per capita lower. The impact of the fiscal referendum on spending can be differentiated according to the spending threshold.[35)] Expenditure per capita is 917 SFr lower in cantons with fiscal referenda for the canton with the median spending threshold of 3 million SFr. The fiscal referendum is still restrictive for a spending threshold of 15 million SFr. It becomes zero at a threshold of 25.8 million SFr.

In a more recent paper, L.P. Feld and G. KIRCHGÄSSNER (2001) get similar results. The estimates show that spending per capita is reduced by 6.5 percent for cantons with fiscal referenda. The estimates of the local spending of 132 Swiss local jurisdictions presented in this paper also corroborate these results. Net local public spending is reduced by 20 percent if a referendum on the issue of new bonds is present in a city’s constitution.[36)]

The corresponding results for the US are somewhat mixed. In an analysis for the year 1980 for 50 US states and 1305 local communities J.S. ZAX (1989a) found that communities with initiatives have higher public expenditure. P.G. FARNHAM (1990) finds mixed results for 735 US cities in 1981/82. J.G. MATSUSAKA (1995) finds a negative impact of initiatives on expenditures per capita for 49 US states in a pooled cross section time series analysis for seven years from 1960 to 1990. He reports that spending per capita and year of states with initiatives was 55 to 110 U.S. Dollar lower (on average about 4 percent) depending on the signature require-

33. For a more detailed description especially of the U.S. studies, see T.R. SASS (2001) or G. KIRCHGÄSSNER, L.P. FELD and M.R. SAVIOZ (1999, Chap. 5).

34. See also W.W. POMMEREHNE and F. SCHNEIDER (1978).

35. In Swiss cantons (and local communities) which have a fiscal referendum in their constitution there usually exists a spending threshold: expenditures above this threshold are subject to a (mandatory or optional) referendum.

36. In L.P. FELD and G. KIRCHGÄSSNER (1999) it is also shown that Swiss cities with budgetary referenda spent less, but had a revenue share from taxes and user charges, as opposed to transfers and subsidies from other government levels, that was 5 percent higher than in cities without such referenda.

ment for the initiative. These results are corroborated by K.S. RUEBEN (1999) in a panel data analysis for the same time period[37)] and by D. BAILS and M.A. TIESLAU (2000), who use data from 49 states observed at five-years' intervals from 1964 to 1994.[38)]

For the period before the Second World War, J.S. MATSUSAKA (2000) finds, however, higher public spending in initiative states in a similar research design as in his previous study. In a panel of 48 U.S. states in the years 1902, 1913, 1932 and 1942, spending per capita and year of states with initiatives was 11 percent higher. The conclusion J.S. MATSUSAKA provides for the differences in his results for both time periods is that the anti-spending impact of initiatives is not a certain policy outcome. Initiatives serve citizens as instruments to correct policy outcomes in direction of their preferences if they deviate from them. If citizens are more liberal (in the American sense) than representatives, this leads to higher spending in states in which an initiative is available. If voters are more conservative than representatives, they reduce government spending by the initiative. Interestingly enough, centralisation of spending was reduced in the U.S. states with initiatives: State spending was less than local spending in those states, before and after World War II.[39)] Since local spending is closer to citizens than state spending and enables them to control spending more strongly, this evidence supports the conjecture outlined that spending outcomes come closer to citizens' preferences in states with initiatives.

While there are also mixed results for revenue of U.S. states for the two periods studied by J.G. MATSUSAKA, the results for Swiss cantons and cities with respect to public revenue are quite strong. The estimates in L.P. FELD and G. KIRCHGÄSSNER (2001) indicate that cantonal (net) revenue per capita is significantly lower in cantons and cities with fiscal referenda. Quantitatively, the impact is also non-negligible: It is 11 percent lower in the cantonal case and 20 percent lower in the case of the cities. In addition, as L.P. FELD and J.G. MATSUSAKA (2000a) have shown, the cantons with direct popular rights in fiscal decisions rely more on user charges than on broad-based taxes. The same holds, as J.G. MATSUSAKA (1995) has shown, for U.S. states with initiatives.

Direct democratic cities in Switzerland also have lower public debt. L.P. FELD and G. KIRCHGÄSSNER (1999) simulate that in 47 out of the 131 Swiss cities investigated (those where the citizens do not have direct rights with respect to budgetary decisions) public debt per capita would – ceteris paribus – have been about SFr 10,000 and thus 45 percent lower in 1990 if these cities had had a corresponding direct democratic organisation.[40)] These results are again corroborated in different econometric models by L.P. FELD and G. KIRCHGÄSSNER

37. These results may, however, not be robust with respect to other political variables such as ideological positions of the electorate. See for this J.F. CAMOBRECO (1998). – The difference between the results of J.S. ZAX (1989) and of J.G. MATSUSAKA (1995) may be due to the fact that J.S. ZAX included Alaska, which is a clear spending outlier.

38. On the other hand, the referendum has a positive but insignificant impact on public expenditure in their model.

39. See also similar results for the Swiss cantons by CH.A. SCHALTEGGER and LARS P. FELD (2001).

40. Excluding Zurich, as an outlier with an extremely high debt, the simulated difference was still SFr 4500 or 24 percent, respectively. Neither formal fiscal restraints, nor a budgetary process with a strong role of the mayor or the secretary of finance, succeed in putting such a strong constraint on debt issuing.

(2001, 2001a). The cantonal estimates in L.P. FELD and G. KIRCHGÄSSNER (2001) are, however, less convincing. There is no significant difference in public debt between cantons with and without fiscal referenda, while budget deficits of the cantons with fiscal referenda are even significantly higher than those of cantons without fiscal referenda. The corresponding results of U.S. states are, on the other hand, unambiguous: D.R. KIEWIET and K. SZAKALY (1996) provide evidence that U.S. states with a referendum on new bonds had a guaranteed debt per capita between 1961 and 1990 that was 33 percent lower.[41)]

The question remains, however, whether the lower level of public spending also leads to a more efficient public sector. Lower public spending could, as A. BRETON (1996) argues, be the result of insufficient vote trading in direct legislation, rendering it inefficient. It is very difficult to make profound statements about empirically measured efficiency. Very few studies attempt to investigate this question.[42)] W.W. POMMEREHNE (1983) analysed costs and prices of local garbage collection in 103 Swiss cities in 1970. He found that average refuse collection costs (per household) were – ceteris paribus – lowest in cities with direct legislation and private garbage collection. These costs were about 10 percent higher when garbage collection was organised publicly instead of privately. In cities with representative democracy the costs of private garbage collection were about 20 percent higher than in direct democracies. Average costs of garbage collection were highest in cities with representative democracy and public organisation (30 percent higher than in the first case). This provides some evidence that direct legislation enhances the efficiency of the public sector. Together with the results on budgetary policy, this is evidence in favour of the hypothesis that direct legislation in Switzerland results in less leeway of representatives to pursue their own interests.

H. WECK-HANNEMANN and W.W. POMMEREHNE (1989) derive interesting results with respect to tax morale.[43)] They present evidence that tax evasion is lower in those Swiss cantons in which citizens have an impact on budgetary policy in direct legislation. Using data for the years 1965, 1970 and 1978, they show that in those cantons tax evasion is – ceteris paribus – about SFr 1500 lower as compared to the average of the cantons without such direct influence.[44)] According to L.P. FELD and B.S. FREY (2001), the higher tax morale in Swiss cantons with direct democracy is also a result of the fact that tax administrations treat their citizens more respectfully than their colleagues in representative democracies. Citizens are rather seen as partners in a psychological tax contract than potential cheaters on the tax code. If, however, the willingness to pay taxes is the higher the more satisfied are citizens with the public services supplied, then these results are evidence for higher satisfaction of citizens and, therefore, for greater efficiency of the provision of public services.[45)]

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41. See also W.A. MCEACHERN (1978).

42. An exception is E.M. NOAM (1980). The efficiency measure used is, however, not very telling.

43. See also W.W. POMMEREHNE and H. WECK-HANNEMANN (1996).

44. There are also theoretical arguments why citizens in direct democracies evade less taxes than those in representative democracies. See W.W. POMMEREHNE, A. HART and L.P. FELD (1997).

45. In addition to these studies which investigate the impact of direct citizens rights on public finance, L.P. FELD and M.R. SAVIOZ (1997) study the relationship between budgetary referenda and economic performance of Swiss cantons measured by GDP per employee. In a panel with annual data from 1984 to 1993 for the 26 Swiss cantons, they arrive at the conclusion that GDP per employee is – ceteris paribus – by about 5

All in all, the evidence regarding the impact of direct popular rights in the budgetary process with respect to public spending, revenue, deficit and debt suggests that citizens demand fewer public services and seem to force a sounder fiscal policy in systems with direct legislation than in parliamentary democracies. This results in a lower public debt per capita under direct democracy. Thus, a referendum democracy appears to fit K. WICKSELL'S (1896) idea of a link between the tax price and public services better than a purely parliamentary system.

5 Fiscal Federalism and the Size of the Public Sector

If direct popular rights should have an effect on the budgetary process also on the lower governmental levels, fiscal federalism is a necessary precondition. As in Switzerland, Canada, and the United States, but contrary, e.g., to the situation in Germany, this federalism has to include the revenue and not only the expenditure side, i.e. it has to allow for tax competition as well.[46] Besides this there is, however, another question. Does a federal fiscal structure itself have an impact on the public budget, i.e. independent of the additional possibilities it creates to put direct popular rights into practice? In this case, one might think of changing the whole fiscal structure from a more centralised to a more decentralised system as an additional possibility to obtain fiscal sustainability.

The hypothesis that fiscal federalism, i.e. a decentralised fiscal structure might reduce the size of the government has originally been stated by W.E. OATES (1972, p. 209). "Centralisation may, for example, lead to a higher level of public spending because of the likely weakening of the link between expenditure and tax payment."[47] The same idea has been put forward by G. BRENNAN and J.M. BUCHANAN (1977, 1978, 1980) who model the government as a Leviathan who maximises tax revenue. They value fiscal competition as a powerful measure to tame Leviathan, i.e. as an effective constraint on the government's power to tax.[48] Thus, while W.E. OATES – corresponding to his 'correspondence principle'[49] – considers the closeness between

percent higher in those cantons with budgetary referenda compared to cantons without those referenda. This result is tested in various ways for robustness. In particular, reversed causality is tested under the hypothesis that richer cantons can afford more direct legislation. On the basis of the empirical results, this hypothesis could be rejected. Moreover, the impact of direct democracy is hardly diminished if additional explanatory variables are included in the empirical model. Again there is corroborating evidence for the U.S. states. S.B. BLOMBERG and G.D. HESS (2000) report that states with initiatives converged with a growth rate that was 3 percentage points higher than their companion states with no initiative during the period 1969 to 1986. – Moreover, in some recent papers, B.S. FREY and A. STUTZER (see, e.g., 2000, 2001) present evidence that people in Switzerland perceive themselves as more satisfied with their life as a whole in direct democratic jurisdictions.

46. While the German Bundesländer altogether have a strong impact not only on their own revenue but also on the revenue of the federal government, a single Bundesland does not have any competence to change any tax rate. Thus, there is only expenditure (transfer) but no tax competition between the German Bundesländer. For a comparison of the two different kinds of federalism in Switzerland and Germany see, e.g., G. KIRCHGÄSSNER and W.W. POMMEREHNE (1997).

47. Though W.E. OATES (1972) does not refer to it, this idea can already be found in K. WICKSELL (1896).

48. See G. BRENNAN and J.M. BUCHANAN (1980, p. 184). For a somewhat less optimistic theoretical analysis in this respect see TH. APOLTE (2001).

49. See W.E. OATES (1972, pp. 33ff.).

the decision makers and the citizens as the relevant factor, G. BRENNAN and J.M. BUCHANAN point to the competitive aspect of fiscal federalism. And while the OATES-hypothesis considers the distribution of tasks between different government levels, the BRENNAN-BUCHANAN-hypothesis is more about the fragmentation at lower governmental levels given the distribution of tasks. Thus, one can distinguish (i) a decentralisation hypothesis and (ii) a fragmentation hypothesis. But both impacts point into the same direction: A federal structure should reduce the tax burden in a country.

This is, however, not the only impact of a federal structure on public expenditure. W.E. OATES mentions the possibility "that decentralisation is expensive because of the loss of potential economies of scale" (1972, p. 209).[50)] It might also be the case that "since individuals have more control over public decisions at the local than at the state or national level they will wish to empower the public sector with a wider range of functions and responsibility where these activities are carried out at more localised levels of government."[51)] Thus, even if total government spending is reduced, it might be increased at the lower governmental levels. Moreover, as has been mentioned above, in a federal state the common resource problem might lead to an overuse of the tax base.[52)] Therefore, fiscal federalism can also have a positive impact on government expenditure, and it is theoretically open whether the positive or negative impact dominates.[53)]

It was also W.E. OATES (1972) who performed the first tests on these hypotheses. For a sample of 58 countries he found a negative correlation between the size of the public sector measured by tax revenues as a percent of GNP and the degree of fiscal decentralisation as measured by the central government share in general government current revenues, but this relation became insignificant as soon as he included GDP per capita into the regression equation. He got quite similar results in a later study (1985) with a sample of 43 countries where he included additional explanatory variables. But when he split this sample into the two sub-samples of industrialised and developing countries, not even the simple correlation coefficients proved to be statistically significant. These results are independent from whether he used the central government share of total government revenue or of total government expenditure as explanatory variable.[54)]

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50. According to J.A. LYBECK (1988, p. 35) this "is frequently claimed in Sweden". The same holds for Switzerland where the merger of some cantons is demanded with this argument. And it has also been used in Germany in the seventies when in many of the Länder the number of local communities has been strongly reduced.

51. W.E. OATES (1985, p. 749). According to him this hypothesis goes back to JOHN J. WALLIS, Prof. of Economic History at the University of Maryland.

52. This problem is similar to the model of pork-barrel politics of B.R. WEINGAST, K.A. SHEPSLE and CH. JOHNSEN (1981). See also R.P. INMAN and M.A. FITTS (1990) for an earlier analysis following these lines. Referring to the Swedish situation, this hypothesis has already been stated by D. TARSCHYS (1975). Evidence for this effect is claimed by M.P. JONES, P. SANGUINETTI and M. TOMMASI (1999) for Argentina.

53. For a theoretical analysis why centralisation might increase the size of government see also T. PERSSON and G. TABELLINI (1994).

54. It is open whether expenditure or revenue is the better measure of the fiscal burden. M.L. MARLOW (1988) argues in favour of expenditure because – according to deficit spending and the inflation tax – official taxes do not cover the total burden.

In the same paper, he also employed a sample of the U.S. states, and according to the observation of G. BRENNAN and J.M. BUCHANAN (1980, p. 185) that "the potential for fiscal exploitation varies inversely with the number of competing governmental units in the inclusive territory" he additionally used the number of local government units as an explanatory variable to measure the degree of fragmentation. However, looking at the simple correlation only the central expenditure share was statistically significant at the 5 percent level, and in the regression together with other explanatory variables only the revenue share got a coefficient which was significantly different from zero and only on the 10 percent level. Thus, he concluded "that there does not exist a strong, systematic relationship between the size of government and the degree of centralisation of the public sector" (p. 756).[55)]

This part of the second study of W.E. OATES was the starting point of a series of other studies. Though M.A. NELSON (1987) presented evidence similar to the one of W.E. OATES (1985), but distinguishing between general purpose and single function local units he was able to show that the average population per general purpose local government unit has a positive impact on state and local taxes as a fraction of personal income.[56)] Similar results have been derived by R.W. EBERTS and T.J. GRONBERG (1988). They explain the expenditure of the major local public services as a percentage of personal income on the level of counties and of 280 Standard Metropolitan Statistical Areas (SMSA) and regress it (along with other variables) on the number of local governments, i.e. either the number itself or normalised by the size of the population or by the total land area in the county or SMSA. In addition, they find that the number of single purpose units has a significant positive effect on (local) public expenditure. Performing the same regressions on the state level they got the same signs for the estimated coefficients but these did not prove to be significant.

In a similar study, J.S. ZAX (1989) takes the aggregate county own-source revenues as a share of county income as dependent variable, and regresses them on the county share of local total revenue and two different measures of fragmentation, governments per capita and governments per square mile, both for general-purpose and single-purpose governments. He gets significant positive coefficients for the county share of local total revenue and for the number of single purpose governments per capita and a significant negative coefficient for the number of general purpose governments per square mile. Thus, the size of the local public sector increases with increasing centralism and with increasing fragmentation of single-purpose governments, and it decreases with increasing fragmentation of general-purpose governments. Contrary to these results, K.F. FORBES and E.M. ZAMPELLI (1989), with data on per capita taxes and revenues for 345 counties in 157 SMSAs, find a significantly positive impact of the number of competing county governments on their size.

55. However, in J.J. WALLIS and W.E. OATES (1988), using a large historical panel data set going back to the turn of the 20th century a significantly positive relation is found between fiscal concentration and the size of the public sector which contradicts his earlier findings for the U.S. states.

56. In M.A. NELSON (1986) he presents mixed evidence: State and local taxes are significantly higher – ceteris paribus – the higher the average population per county, but significantly lower, the higher the state share of total state and local taxes. Thus, while the first result supports the fragmentation hypothesis, the second is contrary to the decentralisation hypothesis.

Because the data sets which are employed are for different levels of aggregation, these empirical results are not necessarily inconsistent with each other.[57)] Nevertheless, the support they provide for the hypothesis that fiscal federalism reduces the tax burden is at best mixed. Moreover, with the exception of J.S. ZAX (1989) the tests performed are about the fragmentation hypothesis and not about the decentralisation hypothesis itself. And those which are directly on the centralisation hypothesis in the various papers by W.E. OATES are also at best mixed.[58)]

There are at least two possible reasons mentioned in the literature for these findings. One is that there might be intergovernmental collusion in the form of intergovernmental grants which reduce competition between lower level units and – in this way – help to increase the size of the government.[59)] Evidence for this hypothesis, i.e. that a higher share of federal grants in the receipts of lower level government increases the total governments share, is presented by P.J. GROSSMAN (1989) in a cross section for the U.S. states as well as in a time series analysis with annual data for the United States from 1948 to 1984.[60)]

The second reason is that the share of state expenditure (or revenue) of total state and local expenditure might be the wrong indicator because the decentralisation hypothesis may still hold even if there is no significant positive relation between this variable and the size of the government as long as federal government expenditure is reduced to such an extent that even an increase of state and/or local expenditure in a federal system are overcompensated. Following this line of reasoning, D. JOULFAIAN and M.L. MARLOW (1991) show for three cross-sections of the U.S. states for the years 1983 to 1985 that in all three years there is a significant negative effect between fiscal decentralisation and the size of the government if federal expenditures are included in the dependent variable, but that there is no significant effect if only state and local government expenditures are considered.[61)] They also find some (although weak) evidence for the fragmentation hypothesis, but no evidence at all for the collusion hypothesis. This is different in R.J. SHADBEGIAN (1999) who – in the most recent study – uses a panel over the U.S. states from 1979 to 1992. He gets highly significant evidence for the collusion hypothesis, but also highly significant results with respect to the centralisation hypothesis: A more decentralised federal system leads to a higher size of state and local governments but to a lower federal and total government size, i.e. the increase of local and state government size is overcompensated by a decrease of the federal government size.

The problem with this study is, however, that the federal government is the same for all U.S. states. It is, of course, possible to disaggregate federal expenditure and grants by states but it is

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57. See for this W.E. OATES (1989).

58. In addition, H.R. RAIMONDO (1989) presents evidence that the decentralisation hypothesis may hold for specific public service areas but not for others.

59. This possibility has already been mentioned by G. BRENNAN and J.M. BUCHANAN (1980, p. 185).

60. See also P.J. GROSSMAN (1989a) where time series results for the extended period from 1946 to 1986 are presented.

61. See also M.L. MARLOW (1988) and D. JOULFAIAN and M.L. MARLOW (1990) for studies which show a significant impact of fiscal decentralisation on the size of the government including the federal level.

not clear what that means. One possible explanation is that in states with a more pronounced federal structure the demand for federal expenditure is – ceteris paribus – lower. This would, however, not necessarily support the Leviathan hypothesis of G. BRENNAN and J.M. BUCHANAN (1980). It might only imply a shifting of federal public expenditure from those states with a more pronounced federal structure to those with a less pronounced one, without affecting the total level. Thus, the really interesting question whether the government size of the U.S. would be larger if it had a less pronounced federal fiscal structure remains unanswered. The results do not support (but, of course, also not contradict) the proposition that countries with a federal fiscal structure have – ceteris paribus – a smaller size of the public sector.

To test this proposition one has to perform the analysis at the national level, as already W.E. OATES (1972) at the starting point of the whole discussion has done. There are also some other earlier studies which try to test this proposition and show the expected negative relation,[62)] but, as J. LYBECK (1988, p. 39f.) correctly states, “if this is due to the constitutional fact as such or rather to the fact that the included federal states (United States, Canada, Australia and Germany in particular) are fiscally conservative states is a matter for consideration.” Moreover, those studies which do not only look at simple correlations but include other explanatory variables provide also mixed results. W.E. OATES (1972, 1985) and J.B. HEIL (1991) do not find a significant impact. Different results are obtained by P.L. SOLANO (1983) who uses a cross-section over 18 democracies and the fiscal year 1968/69 as well as by P. SAUNDERS (1988) who uses a cross-section over 22 OECD countries and the average of the years 1978 to 1980. They find a significant negative impact of federalism on government size. Both employ a dummy to characterise federal countries.[63)] W. MOESEN and PH. VAN CAUWENBERGE (2000) who use a cross section of 19 OECD countries with data averaged over the years 1990 to 1992 get the same result. In all three cases the samples are, however, rather small. On the other hand, because the measure of decentralisation employed by W. MOESEN and PH. VAN CAUWENBERGE (2000) contains only that part of local government expenditures which is entirely financed through local taxes (in relation to total government expenditure), they might better capture the degree of local fiscal independence than earlier studies. Insofar, this study might be a good starting point for future investigations.

Nevertheless, taking all currently available empirical evidence together on the question which is the net effect on the size of the government of a federal fiscal system we might conclude that there is some evidence that fiscal federalism leads – ceteris paribus – to a smaller size of the government, but the evidence is far from being overwhelming.[64)]

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62. See, e.g., D.R. CAMERON (1978) or J.A. LYBECK (1986).

63. P.L. SOLANO (1983) additionally includes a variable for the centralisation of the tax system. Besides the dummy variable for federalism this variable has, however, no significant impact on total government expenditure.

64. A similar picture is derived in a study by W. HETTICH and S.L. WINER (1999, pp. 221ff.) who show for the U.S. states that the tax rate in neighbouring states has a significant negative effect on the average personal income tax rate in a state whereas the tax rate in the state with the most similar social conditions has the (expected) significantly positive sign.

6 Summary and Concluding Remarks

What have we learned from the empirical research in Public Choice of the last years? With respect to the four different kinds of institutions which are considered in this survey, we can summarise the empirical results in the following way:

(i) Balanced-budget rules and limitations of expenditure, taxes, and deficits, have in most cases proved to be effective in cutting down public expenditure, revenue, and debt. However, at least in some cases this leads to a deterioration of the quality of the publicly provided services, especially with respect to schooling.

(ii) Budgetary procedures matter, and the interaction between budgetary procedures and the electoral system also matters: Not all budgetary procedures have the same effect in all electoral systems. They might be less effective than constitutional or statutory balanced-budget or tax and expenditure limitation rules, but in a situation where it is impossible to introduce such rules they might show a feasible second-best way to reach fiscal sustainability.

(iii) A 'first-best solution' might be to give the citizens direct political rights in the budgetary process. As has been shown, citizens demand fewer public services and seem to force a sounder fiscal policy in systems with direct legislation than in purely parliamentary systems. This results in a lower public debt per capita under direct democracy.

(vi) Though it is not overwhelming, there is some evidence that fiscal federalism leads – ceteris paribus – itself to a smaller size of the government.

There remain two remarks which have to be added. First, these are not the only institutions which have an effect on the fiscal behaviour of the government. Besides fiscal institutions and besides political factors like the ideology of the (leading party of the) government or the number of parties in a coalition[65)] there are also political institutions which can have a considerable impact. At least two of them have also been discussed in the literature to a large extent, and in recent years there has also been some empirical research in this respect. One question is about the impact a presidential system like the one in the United States has on public finance compared to a parliamentary system as most European countries have. The second question relates to the electoral system: What is the impact of a majoritarian compared to a proportional electoral system.[66)]

Some empirical evidence on this topic has been presented by T. PERSSON and G. TABELLINI (2000).[67)] Their main results are that presidential regimes lead to a lower size of the government than parliamentary regimes, and that majoritarian elections lead to a lower size of the

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65. N. ROUBINI and J.D. SACHS (1989), e.g., report evidence that governments with a short average tenure and with many political parties in the coalition have – ceteris paribus – higher deficits.

66. See also J.E. ALT and R.C. LOWRY (1994) who investigate the effect of divided government on U.S. state budgets.

67. See also by T. PERSSON and G. TABELLINI (1999), T. PERSSON, G. ROLAND and G. TABELLINI (2000) as well as T. PERSSON and G. TABELLINI (2000, p. 245f., p. 268f.).

government than proportional elections. Due to some problems with their data these results have to be interpreted very cautiously, however.[68)] Nevertheless, this demands for further investigations of the impact these political institutions have on the budgetary process.

The second remark is that there are interdependencies between the different institutions. Two of them have already been mentioned: The most obvious one is that direct popular rights in the budgetary processes at the lower governmental levels are only possible if the respective country has the corresponding federal structure. Thus, even if the empirical results leave some doubts whether fiscal federalism really is a constraint on the size of the government, it is a pre-condition for direct democracy in fiscal matters at these levels, which, according to all what we know, reduces the size of the government. The second one is that budgetary rules have different effects under different electoral systems. But there are other interdependencies as well. Many of the fiscal restrictions in the U.S. states have been introduced by initiatives. And, according to J.G. MATSUSAKA (1995) as well as CH.A. SCHALTEGGER and L.P. FELD (2001), centralisation of spending was reduced in the U.S. states with initiatives and Swiss cantons with budget referenda, respectively.

Thus, a prudent combination of institutions can help to tame Leviathan, i.e. to reduce public deficits and debt and also public expenditure and revenue. The problem is similar to many other economic policy problems: We know possible remedies, but it is difficult to implement them in the political process. Such difficulties are especially strong if the positions of politicians as well as of leading economic interest groups are touched. This should, however, not prevent us from informing the general public about these possibilities. On the other hand, if our proposals do not find a majority in the population, to remain consistent we should not necessarily blame the ignorance of the citizens for this result because we assume in our economic models that the same citizens behave rationally and especially have rational expectations. We should not (always) follow the 'theory of mistakes', as G. STIGLER (1979) has called it, and at least sometimes accept that a majority of the electorate might have different preferences than we do. To accept this is a basic precondition for the functioning of a democratic society.

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68. There are two major problems with their approach. First, they mainly use only the size of the central government as dependent variable. One reason for this might be that as explanatory variables they use the political data also only from the federal level. These results are, however, hardly indicating anything about the total size of the government because they do not control for the different fiscal structures. Second, the characterisation of the different countries as 'presidential' or 'parliamentarian' is highly debatable. They classify, e.g., Switzerland as a 'presidential system', "since the cabinet – even though chosen by the Assembly – has a life of its own; survival does not depend on majority support in the Assembly" (T. PERSSON, G. ROLAND and G. TABELLINI (2000, p. 1151)). This classification does not only overlook that the four parties which formed the government during more than the last four decades in the same composition had always a majority in the parliament of about or even more than eighty percent, but also that the position of the government in the budgetary process is rather weak; it is much weaker than the governments of most other European countries, like, e.g., the German, French or British government.

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